



meeting the challenge

ecbc 2002
Edgewood Chemical Biological Center

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Dear Stakeholders,

Edgewood Chemical Biological Center had a tremendous year in 2002 – its fourth consecutive year of significant growth. Our programs generated a record \$325 million of revenue in 2002, while maintaining an exemplary standard of safety and responsibility.

This growth has been fueled in part by ECBC's ability to support the increased national demand for chemical and biological defense expertise. This demand, spurred by events since 9-11, has allowed ECBC to serve a growing number of military, government and industrial customers. Improved workplace practices, increased efficiencies and a resolute commitment to customer satisfaction have also played key roles in ECBC's growth in 2002.

To support this increased business, our workforce grew during 2002 to include 105 new employees, including 30 interns, bringing fresh approaches and ideas to our laboratories. ECBC scientists, engineers, and technical support personnel made significant advancements this year in studies of long-term agent effects, in technologies for agent detection, protection, and decontamination, and in program areas supporting chemical demilitarization and counterterrorism.

ECBC's innovative research and technology application will allow the U.S. Armed Forces to continue to possess the best CB technology and protective equipment in the world and will allow our nation's leaders to meet today's homeland defense challenges.

I am proud of our past work and look forward to what we will achieve in 2003.

A handwritten signature in black ink, appearing to read "J.H. Zarzycki". The signature is stylized with a large, looped initial "J" and "H".

Mr. J.H. Zarzycki
Technical Director

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ECDB

our mission

Protect the warfighter and U.S. interests through the application of science, technology and engineering in chemical and biological defense.

our vision

Be the source of choice for chemical and biological defense research, development and acquisition support.



strategic goals

- An exceptional workforce of government, academia and industry that embraces and is optimized to meet the changing needs of our customers.
- Providers of the best possible solutions for our customers through our CB expertise, experience and partnerships.
- State-of-the-art equipment and facilities that provide our workforce with an environment that is safe, technologically advanced and allows us to be competitive.
- Increased awareness of ECBC's capabilities by our customers and stakeholders.



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Technical Highlights





Technical Highlights of 2002

Center-wide

- Received highest marks from safety, surety, security and environmental oversight inspectors
- Enhanced homeland defense initiatives to meet specific national needs, including efforts related to mail handling and protecting the national capital region
- Provided significant support to CENTCOM, including Chemical Defense Initiative efforts in five Persian Gulf states, analysis of samples, and deployment of flyaway laboratory and personnel
- Established important new partnerships with Letterkenny Army Depot, U.S. EPA, U.S. FDA, Johns Hopkins University and Virginia Tech
- Advanced our technology transfer initiative with 20 new Cooperative Research and Development Agreements, 24 Technical Service Agreements, and two Patent License Agreements
- Successfully negotiated relationships with private industry and government agencies to allow ECBC participation in Accelerated Neutralization Program at APG. Resulted in the largest CRADA ever signed between the Army and industry.

Research and Technology Directorate

- Made critical scientific advances related to long-term agent affects, including breakthrough nuclear-magnetic resonance spectroscopy techniques and studies in low-level toxicological effects of GB, GF and VX
- Discovered mustard degradation enzyme and preliminary formulation of totally enzymatic decontamination powder
- Successfully demonstrated agent cloud detection using laser standoff detector
- Engineered an advanced filtration capability for removing certain toxic industrial chemicals without incurring increased breathing resistance
- Designed, developed and fielded Mobile Laboratories for integrated and standardized field sampling and analysis in support of first responders, military leaders, and federal agencies when responding to chemical, biological and radiological terrorism worldwide.



CB Services Directorate

- Provided technology development, testing and evaluation support to PM Non Stockpile for the Explosive Destruction System (EDS) and to Deputy Secretary of the Army for Environment, Safety and Occupational Health for the Donovan Chamber, both munition destruction devices. Successful efforts in this area resulted in our nomination to chairmanship of the Army's Demil Technology Assessment Program chartered through Deputy Secretary of the Army for Environment Safety and Occupational Health.
- Developed concept, designed and built the Automated Biological Agent Testing System (ABATS) to support the National Capital Region soon after the events of 9-11.
- Successfully transitioned the Nuclear Radiation Commission (NRC) license to SBCCOM which permits the usage of the over 60,000 chemical agent detectors around the world.
- Created and executed an ECBC process to safely and efficiently exploit improvised devices (and other unknown material) containing chemical, biological and radiological material for both DOD and non-DOD customers. This process is now the "gold" standard.
- Continued our support to the Department of Justice COBRA facility in Fort McClellan, Alabama.

Engineering Directorate

- Developed respirator standards and test methodologies in support of the National Institute of Occupational Safety and Health (NIOSH) and the National Institute of Standards and Technology (NIST) for use in evaluating emergency responder protective gear
- Redesigned the M12 large-scale decontamination device to create a lighter, more efficient and reliable model for use in the Gulf
- Completed WMD Installation Preparedness programs at 31 CONUS and OCONUS sites

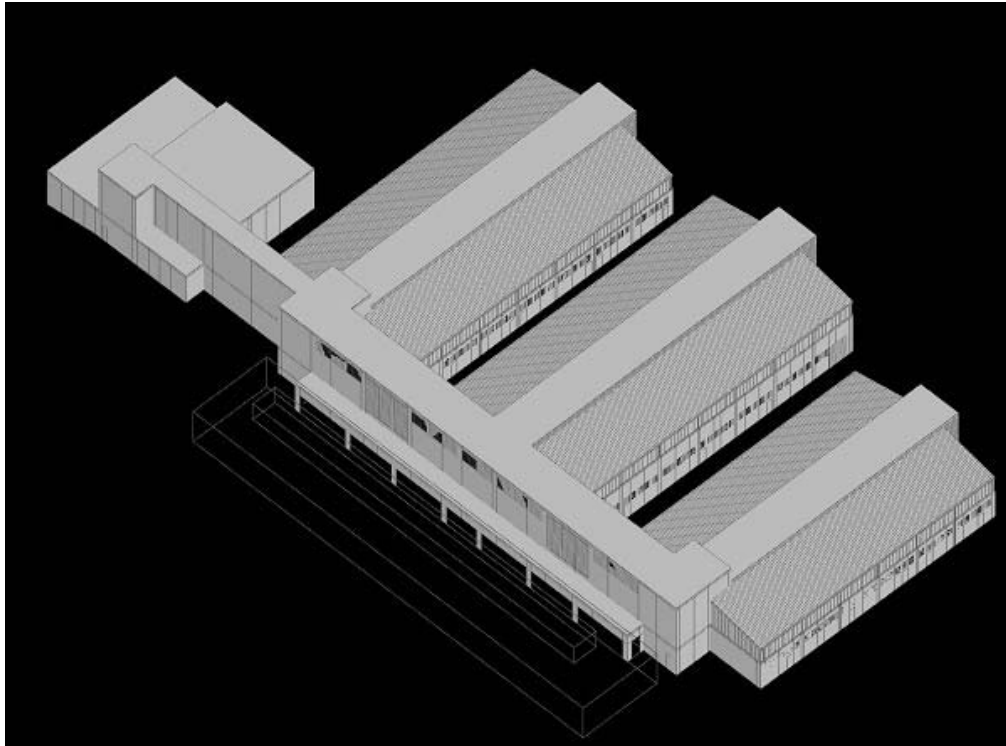


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Infrastructure



The Future of our Infrastructure: The Advanced Chemistry Laboratory



In September 2002, ECBC awarded a \$38 million contract to build an Advanced Chemistry Laboratory (ACL), adding important capabilities to its facility in the Edgewood Area of Aberdeen Proving Ground.

The new ACL will speed research and development of products and services to protect against battlefield and terrorist use of chemical weapons. The 74,000 square-foot building, equipped with the latest in analysis equipment and engineering controls, will consolidate and replace four older laboratories.

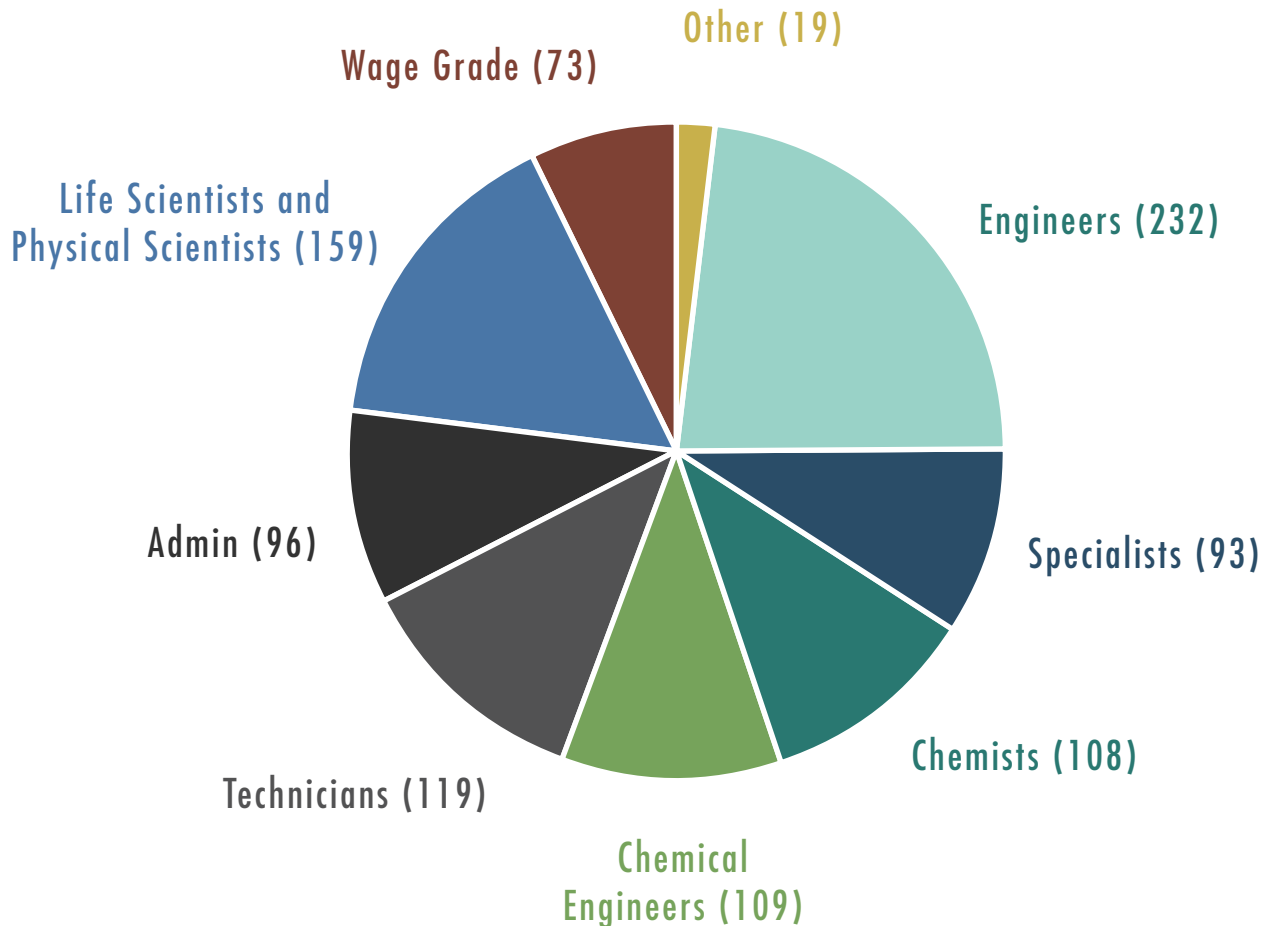
The ACL is expected to be operational in the fall of 2005. In addition to supporting ECBC's mission for the Department of Defense, it will also allow us to better serve many federal agencies including the intelligence community, the Federal Bureau of Investigation, the Department of Justice, and the Department of State.

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Our People



ECBC Personnel as of 12/31/02



Scientists and Engineers	608
Technicians / Specialists	212
Wage Grade	73
Administrative	96
Total Civilian Personnel	989
+ On-Site Contractors	>100

IN 2002, ECBC HIRED 105 NEW EMPLOYEES, INCLUDING 30 INTERNS.



ECBC Team and Individual Awards

- Army Materiel Command (AMC) Integrated Process Team of the Year Award, 2002: Mr. Mark Schlein and team
- Research and Technology Achievement Award, 2002: Dr. Charles Wick and team, and Dr. Akbar Khan and team
- Army Research and Development Award, 2002: Dr. Akbar Khan and team, and Dr. Sanjiv Shah and team
- Ten Outstanding AMC Personnel of the Year, 2002: Mr. Tim Blades
- Ten Outstanding Young Americans Award, 2002: Dr. Jennifer Weeks-Sekowski
- Bronze Federal Executive Board Excellence in Federal Career Awards, 2002: Mr. Gail Hatfield, Ms. Phyllis Smith, Ms. Thelma Lester, Ms. Clara Bennett, Dr. Jennifer Weeks-Sekowski
- Federal Laboratory Consortium Technology Transfer Award, 2002: Dr. Peter Stopa and team, Dr. Charles Wick
- Federal Women's Program Equality Day Award, 2002: The Edgewood Chemical Biological Center team

ECBC's 85th Anniversary Campaign



Starting April 30th, 2002, ECBC embarked on a year-long celebration marking 85 years of CB defense solutions. The 85th Anniversary campaign recognized the invaluable contributions made by ECBC's personnel and their predecessors throughout the long history of CB defense work that began in Edgewood in 1917.



In May 2002, recognizing that women have been and will always be an integral part of the ECBC workforce, ECBC paid tribute to the indispensable contributions these women have made to the Army, the nation, and the world at the Celebration of the Women of ECBC, Past and Present. Thirteen female ECBC retirees attended the ceremony and were honored by keynote speakers Dr. Anna Johnson-Winegar, Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense, Maryland State Sen. Nancy Jacobs and the Honorable Ellen Sauerbrey, United States Delegate to the United Nations' Commission on the Status of Women.

In another 85th Anniversary event, ECBC offered staff a unique opportunity to enhance their knowledge of the Center's broad capabilities. Called the ECBC Discovery Day, this one-day informational tour of ECBC's innovative facilities and unique services was conceptualized, developed and orchestrated by employees. Event attendees met fellow ECBC personnel from other directorates and shared expertise across teams, increasing their knowledge of the many services and products offered by the organization and fostering ties that will lead to greater coordination and synergy in our research and customer work.

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Partnerships



U.S. EPA Initiates Collaborative Relationship with ECBC



In October 2002, the U.S. Environmental Protection Agency signed a Memorandum of Understanding with ECBC and its parent organization, the U.S. Army Soldier and Biological Chemical Command (SBCCOM), to establish a framework for collaborative efforts relating to homeland security. The cooperative agreement will foster research and development work between the

EPA's Office of Research and Development (ORD) and ECBC on projects that link to Edgewood's core competencies in chemical and biological defense products and services. EPA Administrator Christine Todd Whitman and Edgewood Chemical Biological Center Technical Director Jim Zarzycki signed the agreement, which Mr. Zarzycki noted is an ideal way to accelerate our nation's movement towards raising its readiness in the area of homeland security.

"With this set of collaborative opportunities, ECBC and the EPA are well matched," said Zarzycki. "ECBC has the unique infrastructure required to conduct this kind of advanced research."

Research and development efforts specifically targeted under this collaboration appear in the EPA's Strategic Plan for Homeland Security, released in September 2002, and include building security, water security, and rapid risk assessment. ECBC and the EPA will expedite research and development of new tools and technologies that can be implemented in support of homeland security efforts by federal, state or local

government agencies. The two organizations will leverage this relationship to maximize resources, minimize duplication of effort and accelerate technology development.





Technology Transfers

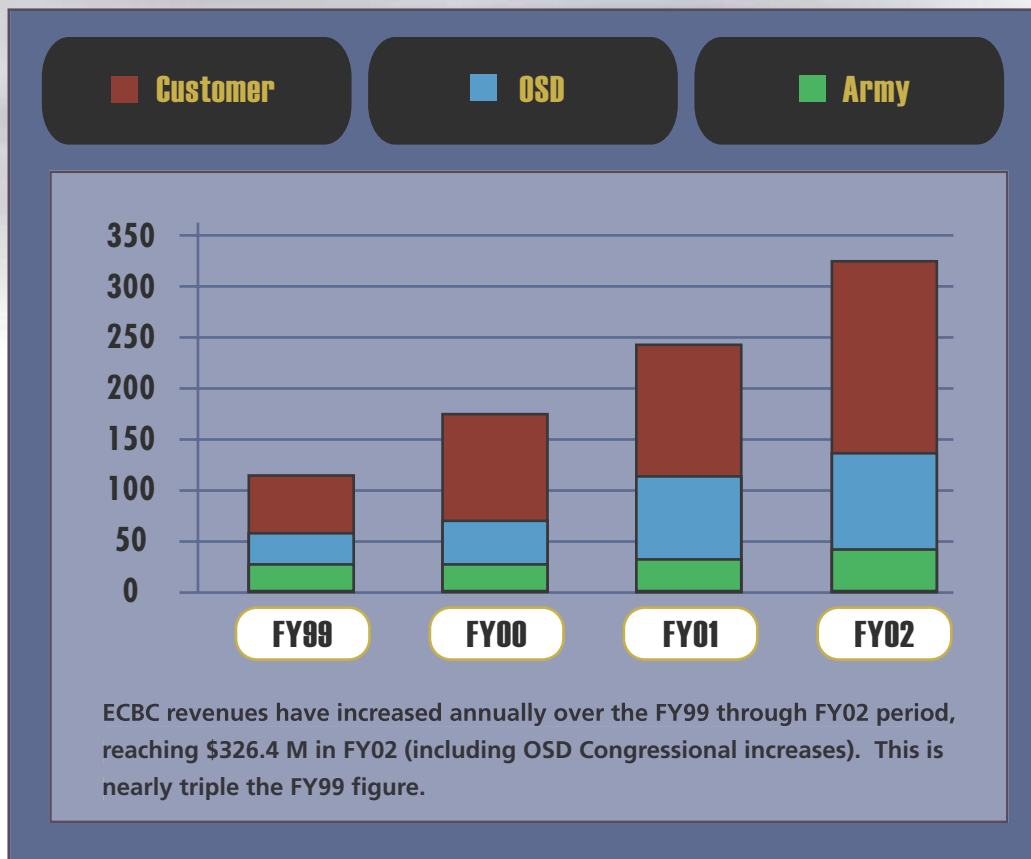
- **19** new Cooperative Research and Development Agreements (CRADAs) signed for a total of **43** active agreements
- **2** new Patent License Agreements (PLAs) for a total of **11** patent license agreements
- **24** new Test Services Agreements (TSAs)
- **13** invention disclosures processed
- **24** new patent applications
- **8** patents issued
- **12** new Interagency Agreements / Memorandums of Understanding / Memorandums of Agreement

Issued Patents during 2002:

- "Nucleotide Sequences for Detection of Bacillus Anthracis"
- "Biological Aerosol Trigger (BAT)"
- "Portable Glovebox and Filtration System"
- "Field Microspot Test Method for On-Site Chemical Testing"
- "Non-Uniform Mask Lens"
- "Propellant-Based Aerosol Generation Devices and Method"
- "Methods of Detecting Methylphosphonic Compounds"
- "Neural Network Systems for Chemical and Biological Pattern Recognition via the Mueller Matrix"

Financial Data

Current ECBC Funding Sources FY99-02 (\$ in Millions)



Revenue (\$ in Millions)

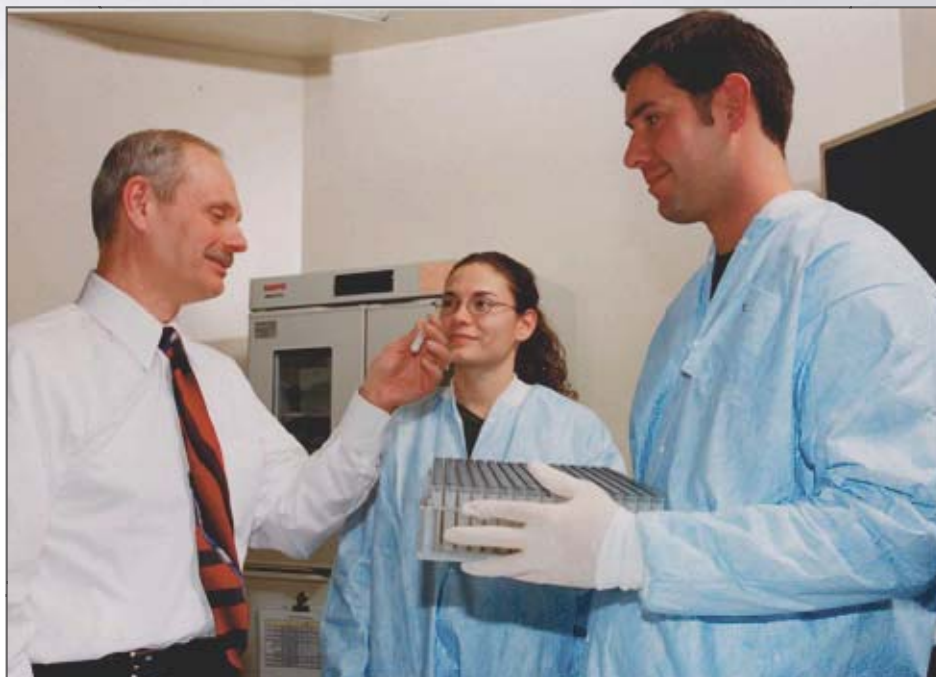
Revenue (\$ in Millions)	FY02	FY01	FY00	FY99
Army Funding				
RDT&E				
Basic Research	1.2	1.1	1.3	1.2
Exploratory Development	8.6	3.8	4.6	5.6
Demonstration and Validation	5.7	0.0	0.0	0.0
Management and Support	6.1	3.5	4.0	3.3
RDTE TOTAL	21.6	8.4	9.9	10.1
ARMY OMA	14.1	13.9	7.8	8.4
TOTAL ARMY FUNDING	35.7	22.3	17.7	18.5
OSD Funding				
RDT&E				
Basic Research	6.2	8.8	2.3	2.3
Exploratory Development	70.0	56.1	40.0	25.5
Advanced Development	11.0	17.3	6.3	11.1
Demonstration and Validation	1.1	1.9	0.0	0.0
Management and Support	2.8	2.8	0.0	0.0
RDTE TOTAL	91.1	86.9	48.6	38.9
PROCUREMENT	0.2	1.0	13.8	11.2
DARPA	1.0	1.5	1.6	0.6
TOTAL OSD FUNDING	92.3	89.4	64.0	50.7
TOTAL MISSION FUNDING	128.0	111.7	81.7	69.2
Customer Funding				
RDT&E	42.5	16.2	32.4	24.2
OMA	47.4	37.6	54.7	21.3
Procurement	20.4	2.6	8.3	5.2
Other	88.1	75.8	7.9	6.9
TOTAL CUSTOMER FUNDING	198.4	132.2	103.3	57.6
GRAND TOTAL ALL FUNDING	326.4	243.9	185.0	126.8

The charts on the preceding pages depicts ECBC funding from FY99 to FY02. The overall trend has been a significant increase in funding. Although ECBC is an Army asset, Army funding only makes up approximately 11% of the overall ECBC budget. This shift to four Service support became official when the Joint Service CB Defense Program was created in 1995.

Funding from OSD is obtained by two main paths: 1) by submitting proposals that are then funded through the Technology Base budget and 2) by being named lead service. Lead service status is obtained by having the best management and infrastructure to handle a particular item through development. OSD funding is still considered customer money although it is allocated directly to us at the beginning of the fiscal year. We had a significant increase in technology base funding in FY02. This was expected as more money was allocated to the Joint Service Tech Base budget. **No significant increases in Tech Base programs are seen in current out-year funding.**

One of our success stories in FY02 is that we increased customer funding over the past four years by 245 percent. Customer money is funding sent to us by the other Services, agencies, organizations or commercial firms to execute programs. In any given year, this can fluctuate tremendously. Fortunately, ECBC has developed solid customer relationships and delivered exceptional work, and customers return year after year.

ECBC Today



While many agencies and organizations today are engaged in chemical and biological defense, the Edgewood Chemical Biological Center remains the “hands on” chemical and biological research, development, and applications leader for our nation’s warfighters and its citizens.

In 1917, ECBC’s ancestor organization was founded to serve the U.S. military’s chemical warfare requirements. Today ECBC is conducting research, development, engineering, testing, and fielding of technologies, having the goal of protecting U.S. warfighters and our homeland from both chemical and biological agents. A snapshot of ECBC today shows its employees organized into four directorates:



- The Research and Technology (R&T) Directorate is the source of chemistry, biology, toxicology, and aerosol physics expertise for within ECBC.
- The Engineering Directorate turns new technologies into fielded products and provides services using state-of-the-art design, testing and prototyping equipment.
- The CB Services Directorate provides a full range of chemical surety and biological materiel management services.
- The Advanced Planning and Initiatives Directorate conducts strategic planning and technical outreach, including fostering technology transfer and international cooperation.

ECBC currently maintains and operates nearly 1,500,000 square feet of space for the purpose of CB Defense. Construction of a new Advanced Chemistry Laboratory at Edgewood is to begin during FY03.



